

CLAIMS:

What is claimed is:

1. A method comprising:
receiving information for transmission to a receiver; and
generating a plurality of sub-carriers to redundantly transmit the information to a user
over a multi-carrier wireless communication channel, wherein each of the sub-carriers is
modified by a set of complex weights to ensure that each of the sub-carriers of the wireless
communication channel propagates along a different physical path to the receiver.
2. A method according to claim 1, wherein each element of the set of complex weights
scales one or more of a sub-carriers amplitude and/or phase at an associated transmission
antenna.
3. A method according to claim 1, wherein developing a set of complex weights comprises:
choosing substantially different weights for each sub-carrier sharing information; and
iteratively repeating until all sub-carriers have been modified.
4. A method according to claim 3, wherein the substantially different weights are chosen to
be orthogonal to the others.
5. A method according to claim 3, wherein developing a set of complex weights comprises:
selecting weight vector(s) to be applied to each of the sub-carriers from a pre-determined
set of weight vectors.

1
1 6. A method according to claim 1, further comprising:

2 transmitting the modified sub-carriers through one or more antenna(e) to the receiver.
1

1 7. A transceiver comprising:

2 a diversity agent, to selectively develop and apply a set of complex weight values to each
3 of a plurality of signals, each corresponding to a sub-carrier of a multi-carrier communication
4 channel, to introduce spatial diversity between such sub-carriers; and

5 a transmit module, coupled with the diversity agent, to receive the modified sub-carriers
6 and transmit the signals to generate a multi-carrier communication channel with intra-channel
7 spatial diversity.
1

1 8. A transceiver according to claim 7, wherein the plurality of signals received from at the
2 diversity agent are baseband signals.
1

1 9. A transceiver according to claim 7, wherein the multi-carrier communication channel is
2 comprised of a plurality of sub-carrier signals, each having a disparate set of complex weights
3 introduced at a baseband of the sub-carriers to effect the spatial diversity between the sub-
4 carriers.
1

1 10. A transceiver according to claim 7, wherein each of the set of complex weights are
2 comprised of a plurality of weight values each associated with one of a plurality of antennae
3 comprising an antenna array through which the sub-carriers are transmitted.
1

1 11. A transceiver according to claim 10, wherein the diversity agent develops the set of
 2 complex weight values for a given baseband signal to be maximally orthogonal complex weight
 3 values applied to another baseband signal.

1 12. A transceiver according to claim 10, wherein the diversity agent develops the set of
 2 complex weight vectors for a sub-carrier that are substantially different from weight vectors
 3 modifying other sub-carriers that include at least a subset of information carried by the sub-
 4 carrier.

1 13. A transceiver according to claim 7, wherein the transmit module upconverts and
 2 amplifies each of the modified baseband signals to generate a plurality of spatially diverse sub-
 3 carriers.

1 14. A transceiver according to claim 13, wherein the transmit module transmits each of the
 2 sub-carriers to one or more receiver(s).

1 15. A transceiver according to claim 7, further comprising:
 2 a memory having stored therein content; and
 3 control logic, coupled to the memory, to access and process at least a subset of the
 4 content to implement the diversity agent.